

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

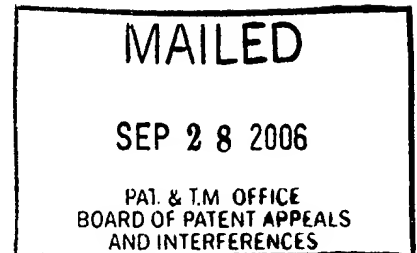
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HYUN LEE, HAN NGUYEN and LAI Q. PHAM

Appeal No. 2006-2226
Application No. 09/785,604

ON BRIEF



Before HAIRSTON, JERRY SMITH, and HOMERE, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-7, 9-13 and 15-17.

The disclosed invention pertains to a method and apparatus for distributing a clock signal generated by a clock generator to a plurality of nodes on an integrated circuit such that the clock signal arrives at each of the nodes with an aligned phase.

Representative claim 1 is reproduced as follow:

1. A method for distributing a clock signal generated by a clock generator to a plurality of nodes on an integrated circuit, said method comprising the steps of:

estimating a clock delay for each of said nodes, wherein said clock delay includes clock generator output delays and resistive-capacitive delays; and

adjusting said clock signal for each node based on said estimated clock delay such that said clock signal arrives at each of said nodes with an aligned phase.

The examiner relies on the following reference:

Kaplinsky	5,298,866	Mar. 29, 1994
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Claims 1-7, 9-13, and 15-17 stand rejected under 35 U.S.C. § 103(a). As evidence of obviousness the examiner offers Kaplinsky taken alone.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, ⁽¹⁾in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in the claims on appeal. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPO 459, 467 (1966). The examiner must articulate reasons for the

examiner's decision. In re Lee, 277 F.3d 1338, 1342, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). In particular, the examiner must show that there is a teaching, motivation, or suggestion of a motivation to combine references relied on as evidence of obviousness. Id. 277 F.3d at 1343, 61 USPQ2d at 1433-34. The examiner cannot simply reach conclusions based on the examiner's own understanding or experience - or on his or her assessment of what would be basic knowledge or common sense. Rather, the examiner must point to some concrete evidence in the record in support of these findings. In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). Thus the examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the examiner's conclusion. However, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. In re Kahn, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (citing In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000)). See also In re Thrift, 298 F. 3d 1357, 1363, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived [see 37 CFR § 41.37(c)(1)(vii)(2004)].

Since appellants did not argue the rejection with respect to the dependent claims on appeal, and since the three independent claims recite similar subject matter, the examiner has addressed the rejection with respect to independent claim 1 only. Specifically, the examiner finds that Kaplinsky teaches the claimed invention except that Kaplinsky does not teach that the clock delay is estimated. The examiner asserts that it would have been obvious to the artisan to estimate the clock delay in Kaplinsky rather than actually measure the clock delay [answer, pages 3-4].

Appellants argue that Kaplinsky does not teach measuring a clock delay because the actual amount of delay in Kaplinsky is unknown. Appellants also suggest that a portion of the description in Kaplinsky is incorrect. Appellants assert that Kaplinsky fails to teach measuring or estimating a clock delay for each of the nodes. Appellants argue, therefore, that Kaplinsky does not teach or suggest estimating a clock delay and adjusting the clock signal based on this estimated clock delay [brief, pages 3-4].

The examiner responds that the description in Kaplinsky is not incorrect. The examiner also asserts that since every measurement is only an estimation based on the accuracy of the measuring instrument, then the measurement of the clock delay in Kaplinsky is, in fact, an estimation of the clock delay. The examiner responds that Kaplinsky does teach that the clock delay for each node is measured [answer, pages 4-6].


Appellants respond that they were only asserting that a portion of the disclosure in Kaplinsky may not necessarily be accurate. Appellants also assert that the precise value of the control voltage 51 in Kaplinsky is unknown, and therefore, the amount of delay induced by the voltage controlled delays is also unknown. Appellants also contest the examiner's contention that a measurement is an estimate. Finally, appellants argue that since Kaplinsky does not teach or suggest estimating a clock delay, then Kaplinsky also cannot teach adjusting the clock signal based on the estimated clock delay [reply brief, pages 3-4].

We will not sustain the examiner's rejection of the claims on appeal. We do not agree with appellants' argument that Kaplinsky does not teach measuring a clock delay for each of the nodes because Kaplinsky specifically states that the invention uses a clock distribution circuit "which senses and measures the clock delay on each signal path and

then adjusts the phase of the outgoing clock signals, so that all of the clock signals arrive at their respective destinations, i.e., at the clock recipient circuits, with substantially the same phase” [column 2, line 66 to column 3, line 2, emphasis added]. Although the exact value of the measurement may not be identified, it is clear that the operation of the Kaplinsky circuit requires a measurement of the clock delay time. Nevertheless, we agree with appellants that Kaplinsky fails to teach or suggest the step of estimating a clock delay for each of the nodes and the step of adjusting the clock signal for each of the nodes based on the estimated delay. First, a measurement is not an estimate as asserted by the examiner. The difference is apparent when one considers that an estimate would not work in Kaplinsky. The operation of Kaplinsky is based on the measured difference between a reference delay path and an actual delay path. This difference controls the output of charge pump 69. The closed loop feedback operation of Kaplinsky cannot work using estimated values because it is the actual value in the feedback loop which must be compared to the reference value in order to control the charge pump 69. Second, it would not have been obvious to the artisan to modify the actual measurements of clock delay in Kaplinsky with estimated values, as asserted by the examiner, because estimated values would not work in Kaplinsky for reasons just discussed.

In summary, we have not sustained the examiner's rejection of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1-7, 9-13, and 15-17 is reversed.

REVERSED


KENNETH W. HAIRSTON
Administrative Patent Judge

Jerry Smith
JERRY SMITH
Administrative Patent Judge

Jean R. Homere
JEAN R. HOMERE
Administrative Patent Judge

BOARD OF PATENT APPEALS AND INTERFERENCES

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